2. The method of claim 1 wherein said single photon is detected by measuring an output pulse from said superconductor strip.

3. The method of claim 1 wherein said superconductor strip is of niobium nitride.

4. The method of claim 1 wherein said single photon has a wavelength between the visible and the far infrared spectral regions.

5. The method of claim 1 wherein said superconductor strip defines a meander.

6. The method of claim 2 wherein said superconductor strip has a width equal to or less than about 200nm.

7. (Amended) A photon detector comprising a superconducting film coupled to a bias source, wherein said superconducting film is maintained at a temperature below its critical temperature and biased near its critical current, and wherein said superconducting film has a dimension which allows detection of a single incident photon.

8. The photon detector of claim 7 wherein said superconducting film is of niobium nitride.

9. The photon detector of claim 7 wherein a width of said superconducting film is equal to or less than about 200nm.

10. The photon detector of claim 7 wherein said superconducting film forms a detectable resistive region upon absorption of said single incident photon.

11. The photon detector of claim 7 further comprising:
a plurality of contact pads coupled to ends of said superconducting film; and
wherein said bias source is coupled to said superconducting film at said plurality of contact pads.

12. The photon detector of claim 7 wherein said superconducting film defines a meander.

13. The photon detector of claim 11 wherein said contact pads include gold.

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14. The photon detector of claim 7 wherein light is coupled to said superconducting film using an optical fiber.

15. The photon detector of claim 7 wherein light is coupled to said superconducting film through a hemispherical lens.

Please add new Claims 16-19 as follows:

16. (New) The method of claim 2 wherein said output pulse has a voltage greater than 1 mV.

17. (New) The method of claim 1 wherein said single photon creates a resistive region extending across the width of said superconductor strip.

18. (New) The photon detector of claim 7, wherein said single photon generates an output pulse from said superconducting film having a voltage greater than 1 mV.

19. (New) The photon detector of claim 10, wherein said resistive region extends across said dimension of said superconducting film.

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